

What is claimed is:

1. A hydrodynamic fluid film bearing for rotatably supporting a shaft journal, comprising:

a stationary retaining member having an inner surface defining a cylindrical opening for receiving a shaft journal, the inner surface including a longitudinally extending slot;

a first generally cylindrical foil element disposed within and lining a portion of the cylindrical opening;

a second generally cylindrical foil element disposed within and lining another portion of the cylindrical opening, the second foil element and the first foil element being attached to one another and forming an anti-rotation fin extending generally radially towards the retaining member and being mounted within the slot of the retaining member; and

a generally cylindrical resilient backing member disposed within the cylindrical opening generally concentric to and radially outward from the first and second foil elements.

2. The hydrodynamic fluid film bearing of claim 1, wherein the first and second foil elements extend in opposite circumferential directions from the slot within the cylindrical opening of the retaining member.

3. The hydrodynamic fluid film bearing of claim 1, wherein the first and second foil elements are welded together to form the fin.
4. The hydrodynamic fluid film bearing of claim 1, wherein the first and second foil elements are integrally connected to one another in the slot.
5. The hydrodynamic fluid film bearing of claim 1, wherein the resilient backing member includes a flange portion projecting from said resilient backing member in a radial direction generally normal to the circumferential direction thereof.
6. The hydrodynamic fluid film bearing of claim 5, wherein the flange portion of the resilient backing member is disposed within the slot to restrain the resilient backing member against rotation.
7. The hydrodynamic fluid film bearing of claim 5, wherein the flange portion of the resilient backing member is attached to the fin formed by the first and second foil elements.
8. The hydrodynamic fluid film bearing of claim 7, wherein the flange portion of the resilient backing member is welded to the fin.

9. The hydrodynamic fluid film bearing of claim 1, wherein the first and second foil elements extend in opposite circumferential directions within the cylindrical opening from the slot and have free ends overlapping one another.
10. The hydrodynamic fluid film bearing of claim 1, wherein the first foil element bears a low friction coating on the radial inner surface thereof.
11. The hydrodynamic fluid film bearing of claim 1, wherein the resilient backing member is a foil member having a corrugated form.

12. A hydrodynamic fluid film bearing for rotatably supporting a shaft journal, comprising:

a stationary retaining member having an inner surface defining a cylindrical opening for receiving a shaft journal, the inner surface including a longitudinally extending slot;

a first generally cylindrical foil element disposed within the cylindrical opening;

a second generally cylindrical foil element disposed within the cylindrical opening generally concentric to the first foil element and being attached to the first foil element to form an anti-rotation fin extending generally radially into the slot of the retaining member to be restrained from rotation;

wherein the first and second foil elements extend in opposite circumferential directions within the cylindrical opening from the slot and have free ends overlapping one another;

a generally cylindrical resilient backing member disposed within the cylindrical opening generally concentric to and radially outward from the first and second foil elements;

whereby enhanced coulomb damping is effected in the bearing by rubbing contact between the first foil element and the second foil element in opposite circumferential directions and by rubbing contact between the resilient backing member and at least one of the first and second

foil elements in opposite circumferential directions of extension thereof.

13. A hydrodynamic fluid film bearing foil assembly adapted to be supported in a bearing housing for journaling of a shaft, comprising:

a first generally cylindrical foil element having a fin portion projecting from said first foil element in a radial direction generally normal to the circumferential direction thereof, and a flex portion extending from the fin portion in the circumferential direction; and

a second generally cylindrical foil element having a fin portion projecting from said second foil element in a radial direction generally normal to the circumferential direction thereof, and a flex portion extending from the fin portion in the circumferential direction;

wherein the fin portion of the first foil element is attached to the fin portion of the second foil element to form an anti-rotation fin and the respective flex portions of the first and second foil elements extend from the fin in opposite circumferential directions.

14. The hydrodynamic fluid film bearing foil assembly of claim 13, wherein the respective fin portions of the first and second foil elements are welded together.

15. The hydrodynamic fluid film bearing foil assembly of claim 13, wherein the flex portions of the first and second foil elements have overlapping portions with the second foil element flex portion being disposed radially inwardly from the first foil element flex portion.

16. The hydrodynamic fluid film bearing foil assembly of claim 13, further comprising a resilient backing member extending in a generally circumferential direction and being disposed generally concentric to and radially outward from the first and second foil elements.

17. The hydrodynamic fluid film bearing foil of claim 16, wherein the resilient backing member further includes a fin portion projecting from said resilient backing member in a radial direction generally normal to the circumferential direction thereof and attached to the fin of the first and second foil elements.

18. The hydrodynamic fluid film bearing foil of claim 16, wherein the resilient backing member extends from the anti-rotation fin in the opposite circumferential direction from the radially adjacent foil element.

19. The hydrodynamic fluid film bearing foil of claim 16, wherein the resilient backing member extends from the anti-rotation fin in the same circumferential direction as the radially adjacent foil element.